691.4

JAN 2 8 1920

PYROBAR REINFORCED

PATENTED

GYPSUM ROOF TILE

30-Inch Type

Solid and Hollow

FIRE RESISTING **HEAT CONSERVING**

LIGHT WEIGHT AND ECONOMICAL

TWO TYPES OF TILE PYROBAR Reinforced Gypsum 30″ Roof Tile are made in two types—"Solid" and "Hollow." Both types are individually factory moulded, insuring uniformity in size and weight and are made of "STRUCTOLITE," a specially prepared gypsum. All tile are reinforced with steel and are designed to carry the full roof load. Both types have face dimensions of 12″ x 30″. The solid tile are 3″ thick; the hollow tile are 4″ thick.

ECONOMICAL PYROBAR Reinforced Gypsum Roof Tile are economical in first cost, and as the decks are fireproof and permanent, the maintenance cost is nil. They are quickly and rapidly erected in any weather. The Tile weigh less than 15 pounds per square foot, which decreases the usual amount of supporting steel. These factors make PYROBAR ideal tile for meeting re-roofing problems.

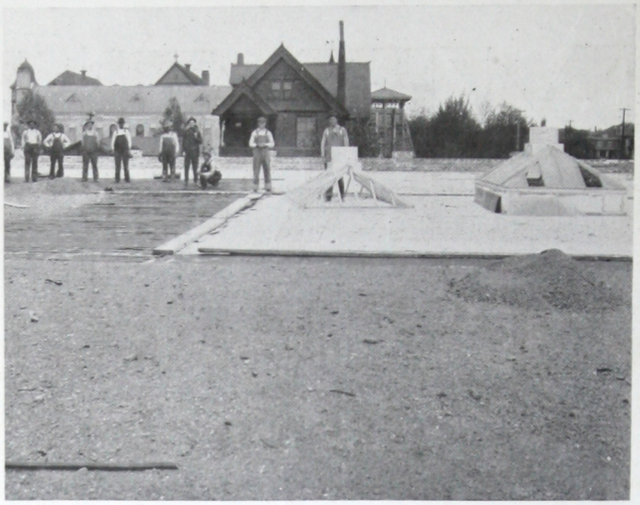
UNITED STATES GYPSUM COMPANY

"World's Largest Producers of Gypsum Products"

205 WEST MONROE STREET, CHICAGO, ILL.

NEW YORK BUFFALO BOSTON PHILADELPHIA WASHINGTON CLEVELAND DETROIT PITTSBURGH
MILWAUKEE MINNEAPOLIS KANSAS CITY ST. LOUIS CINCINNATI DENVER OMAHA LOS ANGELES

Photograph illustrates the ease with which Pyrobar Gypsum Roof Tile can be placed on purlins. The lightness of Pyrobar, compared with other roofing materials, reduces handling and haulage costs.



Roderick Garage, Denver, Colo. Architects, Roeschlaub & Fuller, Denver. Composition, tar and gravel roofing can be applied directly to Pyrobar Gypsum Roof Tile.

French Battery & Carbon Company's Architect, Worden Allen Company, Chicago Roof Tile reduces the average erection time on purlins as soon as the steel framework covering applied directly after the roof de

ADAPTABLE TO LIGHT STEEL FRAMING These tile are suited to any type of roof, flat or steep, and are laid on tee iron purlins. The spaces between tile and flange of the tee irons are filled with gypsum grout which bonds the tile together and forms a homogeneous deck with an even surface, to which any type of roofing may be applied immediately. The tile may be easily cut to fit any roof framing.

LOW CONDUCTIVITY MINIMUM CONDENSATION PYROBAR affords the greatest degree of protection against condensation, or "sweating," owing to the fact that, due to its low conductivity, the temperature on the underside of the roof will remain the same as the average temperature in the room. Consequently, there will be little or no condensation caused by warm, damp air striking a cool under-roof surface.

Gypsum has a lower conductivity, and hence greater insulation value, than any other fireproof building material used for structural purposes, one inch thickness of Pyrobar being equivalent to ten inches of concrete as an insulating medium.

The relative coefficient of conductivity of PYROBAR Gypsum Roof Tile and other roof deck materials has been determined by tests and the following coefficients obtained:

American Ship Building Company's Foundry, Cleveland, Ohio. Architect, The Crowell-Lundoff-Little Co., Cleveland, Ohio. Typical Monitor Roof Construction. Lightness of steel construction and white light reflective qualities of tile are big items in factory management.

Lunkenheimer & Company's Foundry, Cincinnati, Ohio. Architects Bert L. Baldwin & Co., Cincinnati, Ohio. Simplicity of erection of sawtooth, monitor ends and skylight curbs when built of Pyrobar Gypsum Roof Tile is a material factor in erection costs.

French Battery & Carbon Company's Architect, Worden Allen Co., Chicago, I of PYROBAR minimizes co tion. This is of special impo plants. Four-inch hollow tile

n Company's Factory, Madison, Wis.
ipany, Chicago Ill. Pyrobar Gypsum
e erection time, because it can be placed
el framework is erected, and the roof
er the roof deck is in place.

Aluminum Foundry, Simplex Auto Company, New Brunswick, New Jersey. Engineers, Westinghouse, Church, Kerr Company, New York City, N. Y. The illustration shows the use of "gutter fill," a substitute for cinder concrete. It is 60% lighter than conrcete; sets in three hours.

Preparatory Seminary, Rush and Chestnut Sts., Chicago, Ill. Architect, Zachary Davis, Chicago, Ill. Extra dense tile furnished to which slate was directly nailed. Felt can be used underneath slate, if desired. The tile are easily cut and fitted around dormers, turrets, etc.

Conductivity is expressed in terms of B. t. u.'s transmitted per hour per square foot of surface per degree Fahr. difference in temperature.

	Relative Thermal Conductivity
3″ solid concrete slab, 1-2-4 mixture	0.750
2″ yellow pine plank	0.385
1″ solid cement tile	0.990
3″ solid Gypsum Roof Tile	0.250
4″ hollow Gypsum Roof Tile	0.200

COOLER IN SUMMER PYROBAR Roof Tile provide maximum protection against summer heat, keeping the interior air of a building cool.

USE OF TABLES On the following page are shown tables giving size of tee iron sub-purlins for various purlin spacings, and purlin sizes required for various spans, to support PYROBAR based on a total live load of 50 pounds per square foot.

ENGINEERING SERVICE Expert engineering service will be rendered by us in the selection of the type of construction best suited to the purpose of each building. Designs, detailed plans and specifications will be drawn up without cost. Our construction department contracts for the erection of PYROBAR.

Company's Factory, Madison, Wis.
Chicago, Ill. The low conductivity
ondensation and provides heat insula-
rtance for paper mills and wet process
used in this installation.

Martin Apartment Building, Chicago, Ill. Architect, Howard Shaw, Chicago, Ill. Mansard Roof Construction for fireproof buildings, slate or copper roofing being nailed directly to tile.

The St. Mel High School, 42nd Ave. and Madison St., Chicago, Ill. Architect, Wm. F. Gubbins, Chicago, Ill. Pyrobar Gypsum Roof Tile are easily cut and fitted to special roof framing. Extra dense PYROBAR are furnished when Ludowici or heavy baked clay tile are to be used.

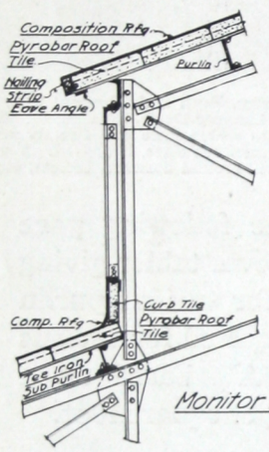
Data Required for Designing Pyrobar Reinforced Gypsum Tile Roofs

SIZES OF CHANNEL PURLINS FOR PYROBAR TILE ROOFS.
TOTAL LOAD 50 LBS. PER SQ. FT. INCLUDING WEIGHT OF ROOF.

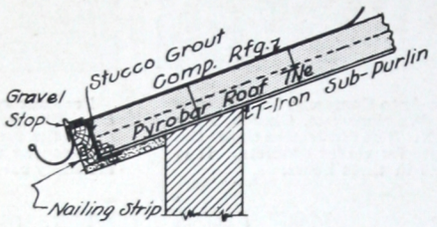
Purlins C. to C. in Feet	Distance Center to Center of Trusses in Feet.							
	10	12	14	16	18	20	22	24
4'-0"	4"-5¼	5"-6½	6"-8	7"-9¾	7"-9¾	8"-11¼	9"-13¼	10"-15
4'-6"	5"-6½	5"-6½	6"-8	7"-9¾	8"-11¼	9"-13¼	9"-13¼	10"-15
5'-0"	5"-6½	6"-8	7"-9¾	7"-9¾	8"-11¼	9"-13¼	10"-15	12"-20½
5'-6"	5"-6½	6"-8	7"-9¾	8"-11¼	9"-13¼	10"-15	12"-20½	12"-20½
6'-0"	5"-6½	6"-8	7"-9¾	8"-11¼	9"-13¼	10"-15	12"-20½	12"-20½
6'-6"	6"-8	7"-9¾	7"-9¾	8"-11¼	9"-13¼	10"-15	12"-20½	12"-20½
7'-0"	6"-8	7"-9¾	8"-11¼	9"-13¼	10"-15	10"-15	12"-20½	12"-20½
7'-6"	6"-8	7"-9¾	8"-11¼	9"-13¼	10"-15	10"-20	12"-20½	12"-20½
8'-0"	6"-8	7"-9¾	8"-11¼	9"-13¼	10"-15	10"-20	12"-20½	12"-25

SPANS FOR WHICH VARIOUS T IRONS SPACED 30½ INCH CENTERS WILL CARRY A TOTAL LOAD OF 50 LBS. PER SQUARE FOOT.

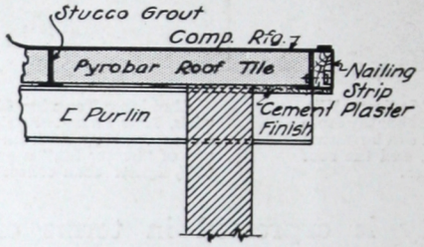
SPAN	SIZE T IRON
UP TO 5'-3"	2¼" × 2¼" × 4.2#
5'-3" TO 5'-10½"	2¼" × 2¼" × 5#
5'-10½" TO 6'-5½"	2½" × 2½" × 5.6#
6'-5½" TO 8'-0"	3" × 3" × 6.8#



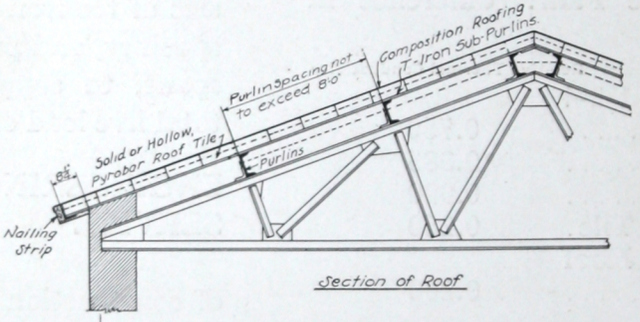
Monitor Details



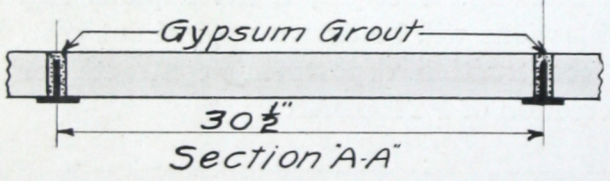
Detail at Eave



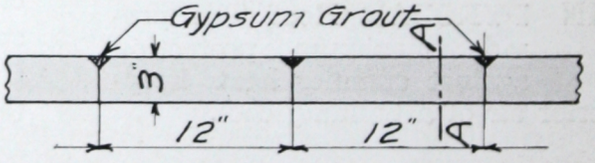
Detail at Gable - Brick



Section of Roof



Section A-A



Specifications for Pyrobar Reinforced Gypsum Roof Tile—30-inch Type

All roofs, as shown on plans, unless otherwise noted, shall be constructed of Pyrobar Reinforced Gypsum Roof Tile, 30" type (specify "solid" or "hollow"), manufactured by the United States Gypsum Company. The tile shall be placed directly upon roof supports without mortar and with sides tight together. All "grouting joints" of the tile shall be filled with gypsum grout, composed of one part unfibred gypsum cement plaster and three parts of clean, sharp sand.

Curbs under monitor or sawtooth sash, also the end walls of monitors or sawteeth, shall be constructed of 3" solid Pyrobar Tile set in gypsum cement mortar, the joints being well bedded and struck.

Note: Where it is desired to nail roof coverings directly to the roof deck, the above specifications should read "to be constructed of Pyrobar Long Span Reinforced Gypsum Roof Tile with Extra Thick Nailing Deck."

Cut nails or barbed slater's nails shall be used to fasten roof covering, and nails shall have at least 1½" penetration into the gypsum tile.

UNITED STATES GYPSUM COMPANY

"World's Largest Producers of Gypsum Products"

205 WEST MONROE STREET, CHICAGO, ILL.

NEW YORK BUFFALO BOSTON PHILADELPHIA WASHINGTON CLEVELAND DETROIT PITTSBURGH
MILWAUKEE MINNEAPOLIS KANSAS CITY ST. LOUIS CINCINNATI DENVER OMAHA LOS ANGELES